PCT WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 5 : C12N 15/33, 15/54, 15/10, C12Q 1/68 C12N 9/12, 512, C12P 21/08 A61K 39/12, 39/42	A1	(11) International Publication Number: WO 91/07502
		(43) International Publication Date: 30 May 1991 (30.05.91)

(21) International Application Number: PCT/US90/06285

(22) International Filing Date: 30 October 1990 (30.10.90)

(30) Priority data:

433,492	8 November 1989 (08.11.89)	US
515,993	27 April 1990 (27.04.90)	US
573,509	27 August 1990 (27.08.90)	US

(71) Applicant: BAYLOR COLLEGE OF MEDICINE [US/US]; One Baylor Plaza, Houston, TX 77030 (US).

(72) Inventors: ESTES, Mary, K. ; 219 Carey Lane, Friendswood, TX 77546 (US). JIANG, Xi ; 1956 Dryden #8, Houston, TX 77030 (US). GRAHAM, David, Y. ; 4051 Mischire, Houston, TX 77054 (US).

(74) Agent: PAUL, Thomas, D.; Fulbright & Jaworski, 1301 McKinney, Suite 5100, Houston, TX 77010-3095 (US).

(81) Designated States: AT (European patent), AU, BE (European patent), CH (European patent), DE (European patent), DK (European patent), ES (European patent), FR (European patent), GB (European patent), GR (European patent), IT (European patent), JP, LU (European patent), NL (European patent), SE (European patent).

Published
With international search report.
Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

(54) Title: METHODS AND REAGENTS TO DETECT AND CHARACTERIZE NORWALK AND RELATED VIRUSES

(57) Abstract

Double-stranded cDNA was synthesized from nucleic acid extracted from Norwalk virus purified from stool specimens of volunteers. One clone was isolated from a cDNA library constructed in a pUC-13 vector after amplification of the cDNA. The specificity of this cDNA (pUCNV-953) was shown by hybridization assays. The cDNA reacted with post- (but not pre-) infection stool samples from Norwalk volunteers and with highly purified Norwalk virus, but not with other common enteric viruses such as hepatitis a virus and rotavirus. Finally, the probe detected virus in the same fractions of CsC1 gradients in which viral antigen was detected using a specific Norwalk virus radioimmunoassay, and particles were detected by immune electron microscopy. The availability of a Norwalk-specific cDNA and the first partial genome sequence information allow rapid cloning of the entire genome and of establishment of sensitive diagnostic assays. Such assays can be based on detection of Norwalk virus nucleic acid or Norwalk viral antigen using polyclonal or monoclonal antibodies to proteins expressed from the cDNA or to synthetic peptides made based on the knowledge of the genome sequence. Vaccines made by recombinant DNA technology are now feasible.

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AT	Austria	FI	Finland	ML	Mali
AU	Australia	FR	France	MN	Mongolia
BB	Barbados	GA	Gabon	MR	Mauritania
BE	Belgium	GB	United Kingdom	MW	Malawi
BF	Burkina Faso	GN	Guinea	NL	Netherlands
BG	Bulgaria	GR	Greece	NO	Norway
BJ	Benin	HU	Hungary	PL	Poland
BR	Brazil	IT	Italy	RO	Romania
CA	Canada	JP	Japan	SD	Sudan
CF	Central African Republic	KP	Democratic People's Republic of Korea	SE	Sweden
CG	Congo			SN	Senegal
CH	Switzerland	KR	Republic of Korea	SU	Soviet Union
CI	Côte d'Ivoire	LI	Liechtenstein	TD	Chad
CM	Cameroon	LK	Sri Lanka	TG	Togo
DE	Germany	LU	Luxembourg	US	United States of America
DK	Denmark	MC	Monaco		
ES	Spain	MG	Madagascar		